

DIET AND EXERCISE

Context

Healthy eating helps young people grow, develop and do well in school. It helps prevent childhood and adolescent health problems such as obesity, disordered eating, dental caries and iron deficiency anemia. Healthy eating may help prevent health problems in later life, including heart disease, cancer and stroke – the three leading causes of death. Chronically undernourished children are more likely to become sick, miss school, and score lower on tests. Calcium intakes of children and adolescents are far below recommended levels, and may be an important risk factor for fractures in adolescents as well as osteoporosis later in life. Poor eating habits and inactivity are the root causes of overweight and obesity.

Obesity among youth has more than doubled in the past 30 years (U.S. Department of Health and Human Services, 1997b). Obesity acquired during childhood or adolescence may persist into adulthood, increasing later risk for chronic conditions such as diabetes, heart disease, high blood pressure, stroke, some cancers, and gall bladder disease (Public Health Service, 1988). In Wisconsin in 1997, nearly one-third of all adults are considered overweight according to body mass index (Bureau of Health Information, 1998). In addition, obesity has been linked to decreased social achievement including fewer years of advanced education, lower likelihood of being married and higher rates of poverty (Wisconsin Obesity Prevention Steering Committee, 1999).

Most Americans currently do not consume healthy diets according to dietary recommendations. Most diets are high in fats and low in complex carbohydrates and dietary fiber. The average national intake of milk and dairy foods by children and adolescents is only 12 – 49 percent of dietary recommendations (American Academy of Pediatrics, 1999). Dietary Guidelines for Americans and the Food Guide Pyramid established by the U.S. Department of Agriculture (USDA, 1992) recommend that people eat at least two servings of fruits and a minimum of three servings of vegetables a day, and three or more servings of dairy products. In addition, sedentary lifestyle patterns can increase the risk of many diseases and chronic conditions.

Inactivity and poor diet cause at least 300,000 deaths per year in the United States. Only tobacco causes more preventable deaths (U.S. Department of Health and Human Services, 1997a). Regular physical exercise in childhood and adolescence improves strength and endurance, helps build healthy bones and muscles, helps control weight; reduces anxiety and stress and increases self-esteem. Adults who are less active are at a greater risk of dying of heart disease and developing diabetes, colon cancer and high blood pressure. Only about half of young people in the U.S. regularly participate in vigorous physical activity and a quarter reported no vigorous activity.

Highlights

- Fourteen percent of all students were overweight according to their Body Mass Index.
- Female students were more likely than male students to report being overweight and were twice as likely to report trying to lose weight.
- Seventy percent of students reported taking action to lose weight or keep from gaining weight.
- Only 61 percent of students consumed the recommended amount of fruits, 15 percent consumed the recommended amount of vegetables, and 45 percent consumed the recommended amount of dairy products.
- Sixty percent of students said that they had exercised or participated in physical activity for at least 20 minutes on three or more of the past seven days.

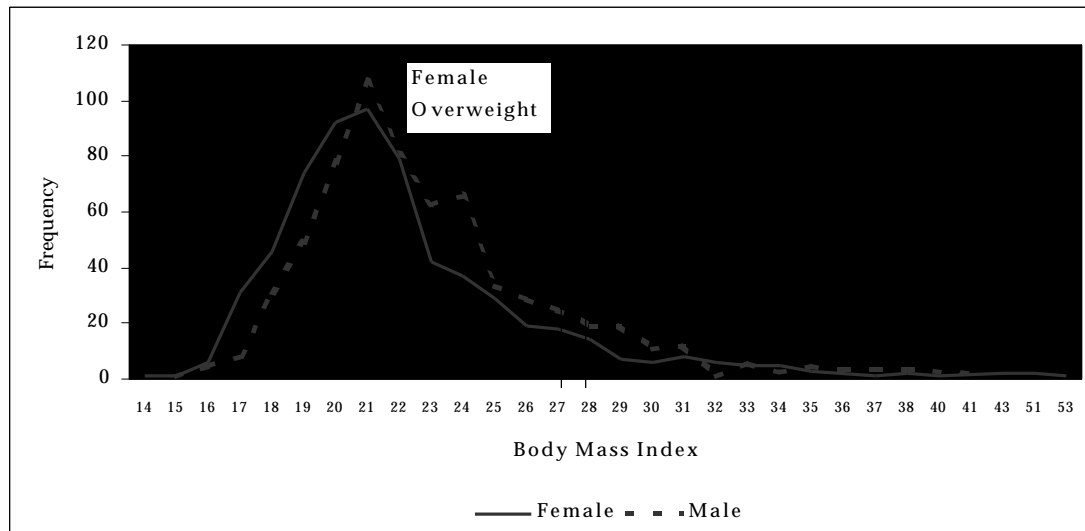
- Students in Wisconsin were more likely to report attending a daily physical education class and playing on one or more team sports than the national average.

General Prevalence Rates

Students were asked to specify their height and weight. That information was used to calculate their Body Mass Index (BMI)¹. A BMI greater than 27.3 for females and 27.8 for males is considered overweight. On average, female students have a BMI of 22.2 and male students have a BMI of 23.2 (see Figure 1). Female students' BMIs range from 14 to 52.9 and male students' BMIs range from 15 to 41. Fourteen percent of all students are overweight according to their BMI.

Figure 1. Body Mass Index

Frequency distribution of body mass index by gender.

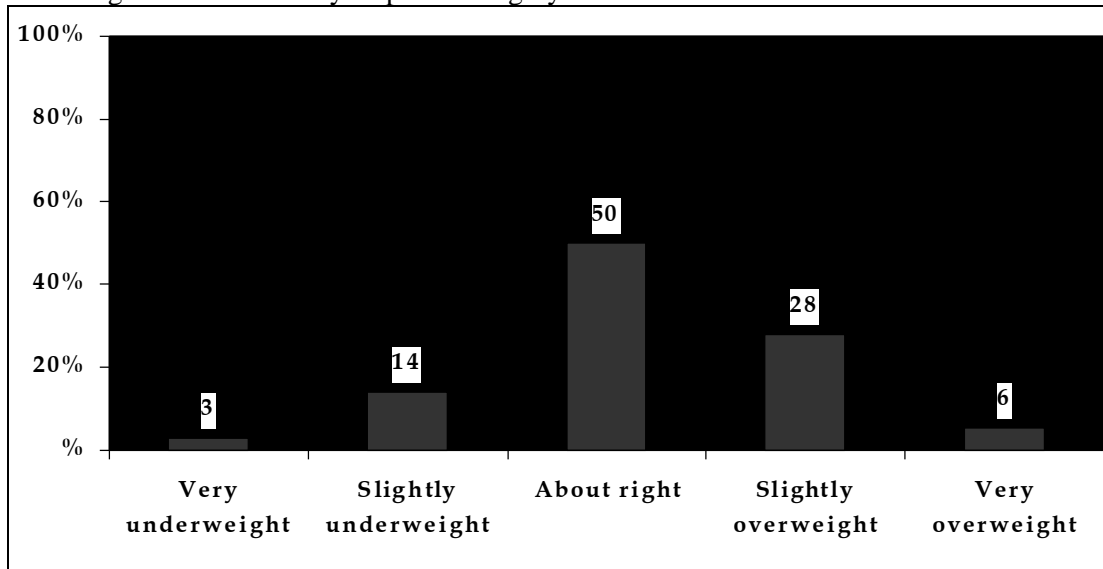


¹ Body Mass Index is calculated by dividing a person's weight in kilograms by their height in meters squared.

Half of all students reported that they were “about the right weight” (see Figure 2). One-third said they were either slightly or very overweight and about a sixth said they were either slightly or very underweight. More than two in five students said they were trying to lose weight, about one in five were trying to maintain the same weight and another one in five said they were not doing anything about their weight. One-fifth of all students reported eating less in the past 30 days as the most frequent thing they did to lose or keep from gaining weight². More than four in ten students said that they had exercised in the past 30 days as the most frequent thing they did to lose or keep from gaining weight. One percent of students said they had vomited or taken laxatives in the past 30 days as the most frequent thing they did to lose or keep from gaining weight and about two percent said they had taken diet pills in the same period. Those who said that they are trying to lose weight are much more likely than others to report eating less, not eating at all, taking diet pills and vomiting or taking laxatives. This is also true for those who felt that they were slightly or very overweight. Exercise was most commonly cited by those who said that they were about the right weight or who were trying to stay the same weight.

Figure 2. Body Image

Percentage of all students by response category.



² The question asked about a series of activities including exercise, eating less, taking diet pills and vomiting or taking laxatives. In addition, vomiting was combined with taking laxatives as a single response option. Students were asked to specify the **one** activity they had done in the past 30 days most frequently to lose weight or keep from gaining weight. This question structure likely obscures the true prevalence of individual activities and thus should be interpreted with caution.

Sixty percent of students said that they had exercised or participated in physical activities for at least 20 minutes on three or more of the past seven days (see Figure 3). Fifteen percent of students reported no such exercise in the past seven days. One third of the students reported that they have no physical education (PE) classes in an average week. Four in ten said they had PE five days a week, 14 percent said they had classes three or four days a week, and ten percent said they had PE one or two days a week. Among students who had PE, 81 percent said that they received over 20 minutes of exercise or playing sports. In addition, 60 percent of students reported being involved in at least one team sport in the past 12 months (see Figure 4).

Figure 3. Physical Activity

Percentage of all students by the number of days in the past seven on which they engaged in 20 minutes or more of strenuous physical activity.

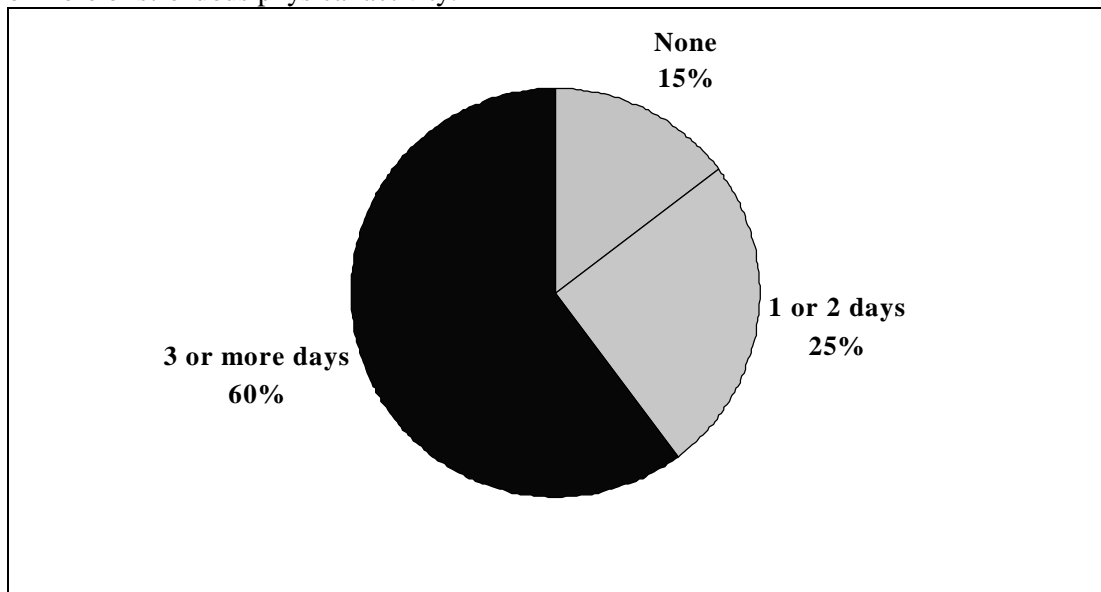
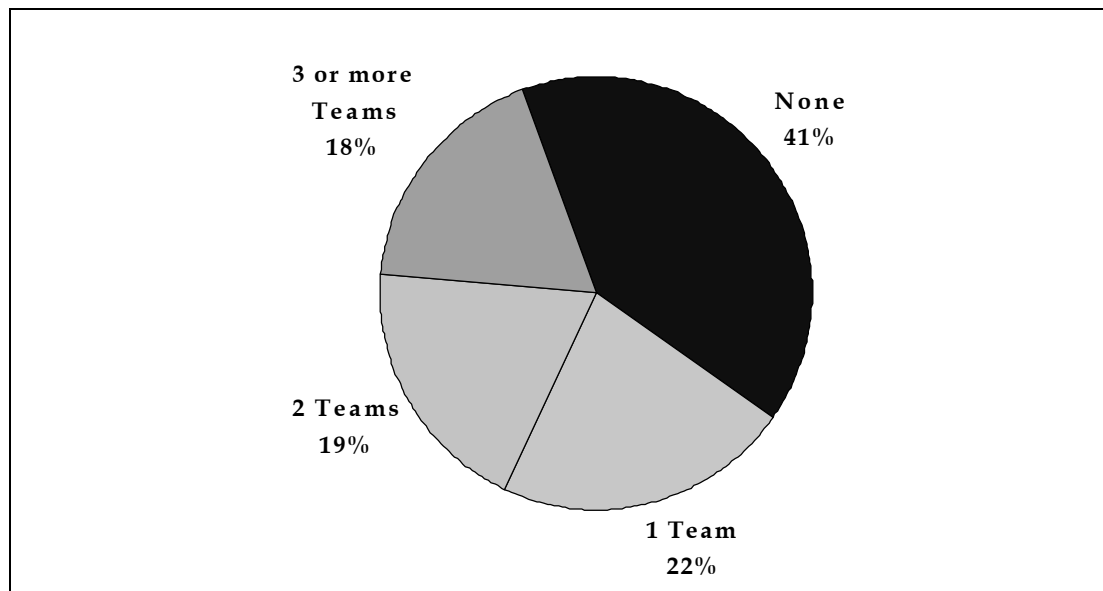


Figure 4. Participation in Team Sports

Percentage of all students by the number of team sports they have participated in during the past 12 months.



Sixty-one percent of students ate the recommended amount (two servings) of fruits on the day prior to the survey³. Fifteen percent ate the recommended amount of vegetables (three servings) on the day prior to the survey. Forty-five percent of students ate the recommended amount of dairy products (three servings) on the day prior to the survey.

When 1997 National YRBS results and 1999 Wisconsin YRBS results are compared, two significant differences emerge. First, students in Wisconsin are more likely to report attending a daily physical education class than the national average (43 percent compared to 27 percent). Second, students in Wisconsin were more likely to play one or more team sports than the national average (60 percent compared to 50 percent).

Trends

There are no significant differences between students' opinions of their weight or in their attempts to do something about their weight in 1993 and 1999. There is also no significant difference in the number of days in the past week students in 1993 and 1999 reported engaging in strenuous exercise for at least 20 minutes. Despite the percentage of students who said that they had no PE class increasing from 26 percent in 1993 to 34 percent in 1999, there were no significant differences in the reported number of PE classes per average week or in the number of minutes of exercise per PE class. In addition, the percentage of students who reported participating in sports teams significantly decreased from 66 percent in 1993 to 60 percent in 1999.

³ Data from the YRBS should be interpreted with some caution when looking at nutritional patterns among high school students for several reasons. First, questions only asked about the number of "times" students ate certain foods, not the number of servings they had. For example, if a student had a sandwich the day before the survey, they may report having bread a single time, while a sandwich made with two slices of bread would count as two servings. It is also unclear if the foods eaten on the previous day are in fact an accurate prediction of regular dietary patterns. And finally, retrospective self-reports of dietary intake are often inaccurate because of the complexity of accurately reporting this information.

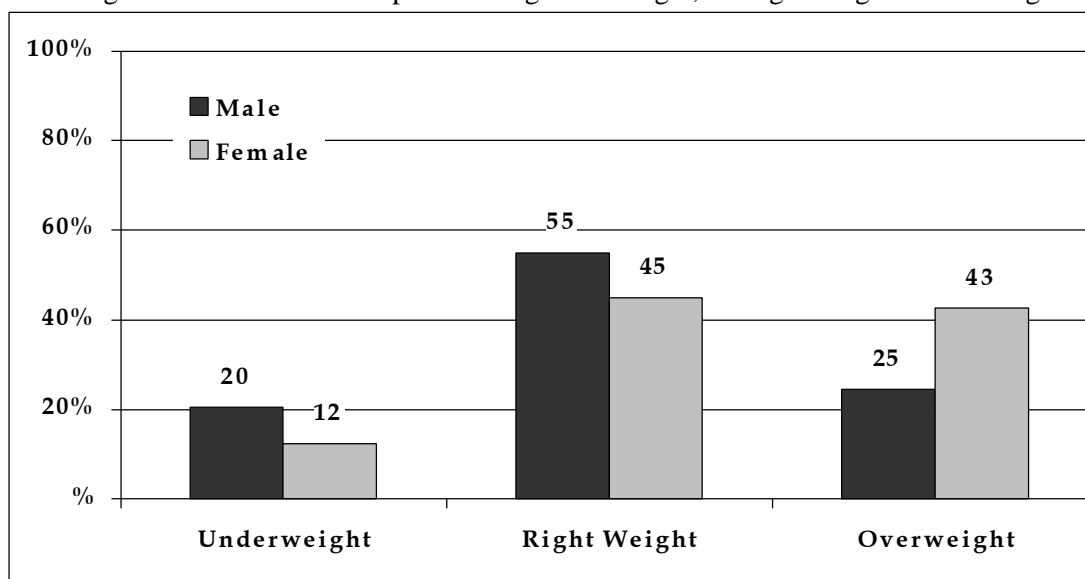
Comparisons by Demographic Groups

Gender

There is no significant difference between male and female students in those who are overweight according to their BMI. However, there are a number of important differences in body image, attempts to change one's weight, diet, and exercise between male and female students. Male students are much more likely than female students to believe they are “about the right weight” (see Figure 5). In addition, female students are more likely to report being slightly or very overweight. Female students were over twice as likely to report trying to lose weight while male students were more likely to report trying to gain weight. Female students were significantly more likely to have reported eating less, taking diet pills, and vomiting or taking laxatives in the past 30 days to lose or keep from gaining weight.

Figure 5. Self-described Weight by Gender.

Percentage of all students who reported being underweight, the right weight or overweight by gender.

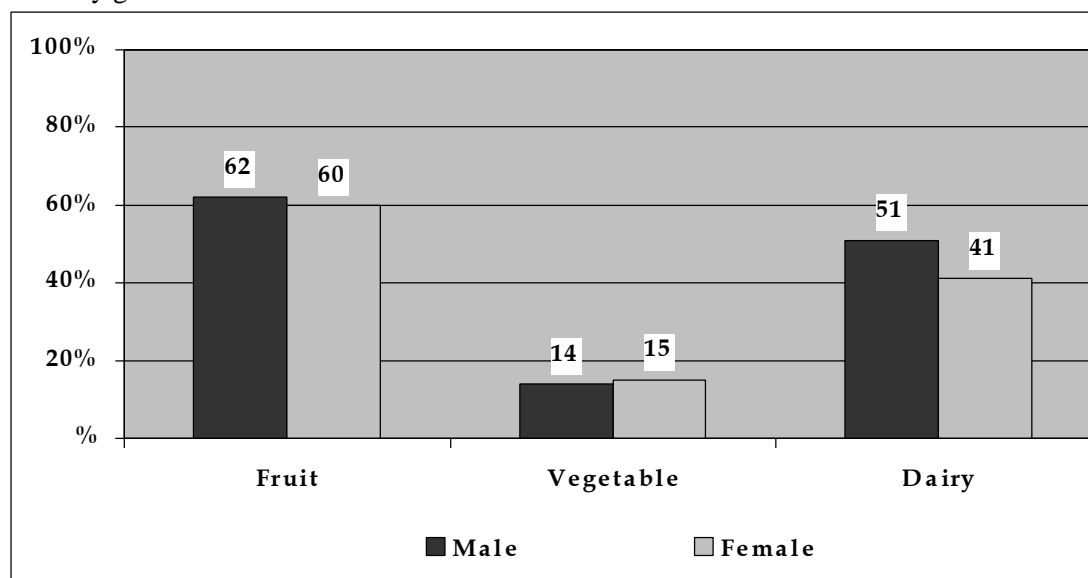


Female students were more likely to report not exercising for 20 or more minutes on any day in the past seven and less likely to report doing this on three or more days in the past seven than male students (56 percent compared to 65 percent). Though the differences were only marginally significant, female students were more likely to report that they had no PE classes in an average week and male students were more likely to report PE classes on all five days in an average week. Likewise, male students were more likely than female students to report spending more than 20 minutes exercising during an average PE class. Female students also reported being on fewer sports teams. Sixty-four percent of male students reported being on two or more teams while only 55 percent of female students reported the same.

In general, there was no significant difference between female and male students in their fruit or vegetable consumption of the day prior to the survey (see Figure 6). However, female students were more likely to report having dairy products one or two times in the past day or not having them at all, while male students were more likely to report having dairy products three or more times on the day before the survey.

Figure 6. Fruit, Vegetable and Dairy Consumption by Gender.

Percentage of all students by the percent who ate the recommended amount of fruit, vegetables and dairy foods by gender.



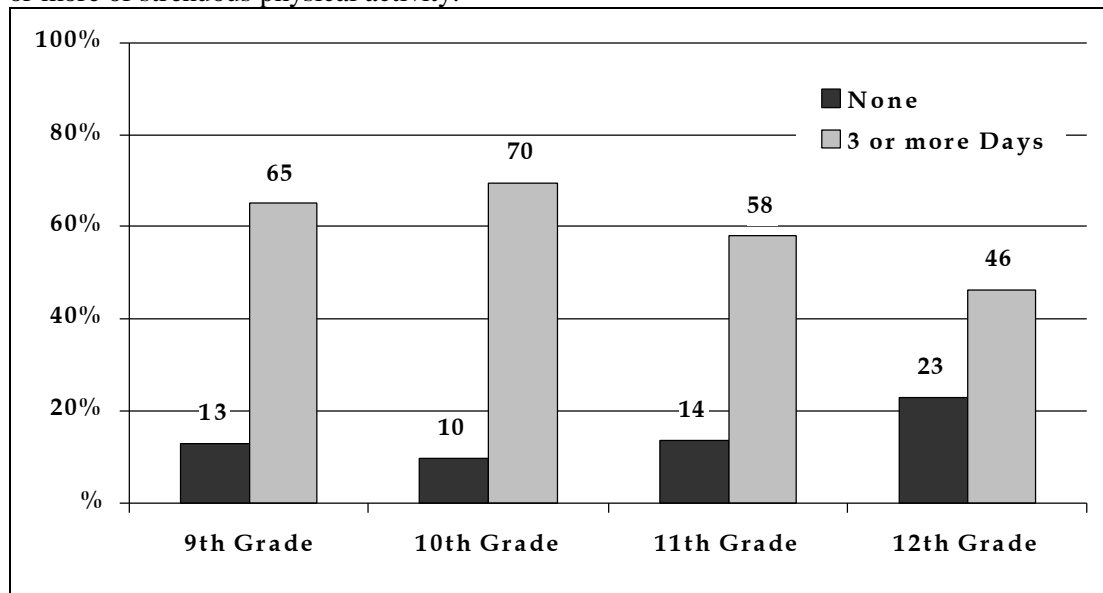
Grade

There are many specific differences among students in the various grade levels, though there are few notable patterns in these differences. There were no significant differences between the grades in the percentage who are overweight according to their BMI, how they describe their weight, or what they would like to do about their weight. However there were a number of possible trends with respect to specific actions that students took to lose or maintain their weight. There was a slight decrease in those who said that they exercised to lose or maintain their weight with grade. There was also a slight increase among those who said that they ate less to lose or maintain their weight with grade. There is also a slight decrease in use of diet pills to lose or to keep from gaining weight with grade level.

There is a significant pattern, however, regarding exercise patterns. Students are more likely to report zero days in the past seven of exercising at least 20 minutes as grade level increases and are less likely to report exercising on three or more days in the past week (see Figure 7). Students are also more likely to have fewer or no PE classes as grade level increases⁴. Interestingly, a similar trend occurred with team sports. As grade level increases, students are involved with fewer team sports.

Figure 7. Exercise by Grade Level

Percentage of all students by the number of days in the past seven on which they engaged in 20 minutes or more of strenuous physical activity.



There is a small trend in dietary differences among the grade levels. Generally, the likelihood of reporting having had fruit or fruit juice increases with grade level. There is, however, no difference between the grades among those who report eating vegetables or dairy products.

⁴ This is especially true for seniors. Nearly two-thirds of seniors have no regular PE classes.